



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,479	09/27/2004	Lloyd Ballard Mauldin		2478

30801 7590 10/26/2006

CHEMICAL PRODUCTS CORPORATION  
P.O. BOX 2470  
102 OLD MILL ROAD S.E.  
CARTERSVILLE, GA 30120-1692

EXAMINER
----------

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

C

<b>Office Action Summary</b>	<b>Application No.</b> 10/708,479	<b>Applicant(s)</b> MAULDIN ET AL.	
	<b>Examiner</b> Terressa M. Boykin	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**Response to Arguments**

Applicant's arguments filed 10-19-06 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "this source does not give any indication that alkylene carbonates can react with esters or polyesters" ) are not specifically recited in the rejected claim(s). Although the claims are *interpreted* in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants' claim 1 remains so broadly set forth that the claim continues to be interpreted by the Examiner as anticipated by the reference in spite of applicants arguments while remaining within the scope of the specification since such is not "specifically set forth in the claims. Without such clarity, the art of record remains within the scope of the present claims and the applicants arguments although understood and appreciated are moot on those basis.

\* It would be beneficial and helpful for the applicants in order to expedite the prosecution of the case to be in position of allowability by using language from the specification or drawn directly from the examples of the specification that would clearly and further specify the claimed language without, of course, unfairly limiting applicants intended invention.

\*\* This is to clarify that applicants claims 1 - 18 stand rejected not *objected* to as inadvertently stated by applicants.

Art Unit: 1711

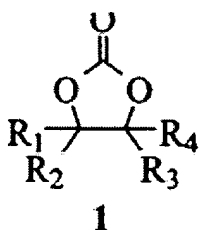
**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1- 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over John H. Clements see abstract, claims.**

**John H. Clements** discloses five-membered alkylene carbonates (1,3-dioxolan-2-ones) of the general structure



Note the (Table 1)

**Table 1. Properties of Ethylene and Propylene Carbonate**

property	EC	PC
boiling point (°C)	248	242
freezing/melting point (°C)	36.4	-49
flash point (°C)	160	135
viscosity (cP, 25°C)	2.56 <sup>a</sup>	2.50
% VOC <sub>b</sub> (110 °C)	34	28

<sup>a</sup> Supercooled liquid. <sup>b</sup> Volatile organic content.

**Figure 1.** Synthesis of five-membered alkylene carbonates via insertion of CO<sub>2</sub> into oxiranes. R ) H, CH<sub>3</sub>, or C<sub>2</sub>H<sub>5</sub>.

The physical properties of Table 1 demonstrate why EC and PC are attractive solvent substitutes. In addition to their biodegradability and high solvency, they have high

Art Unit: 11

boiling and flash points, low odor levels and evaporation rates,<sup>5</sup> and low toxicities.

The reference notes that, in addition to prepolymer synthesis, the above solvents also finds use in *polymer modification*. The reference discloses specifically that EC has been reacted with poly(ethylene terephthalate) (PET) polyesters in an effort to reduce the acid number of the material.

Thus, it is already known that cyclic ester solvents such as cyclic alkylene carbonates may be used as solvents for PET in general. Table 1 demonstrates the stability and temperatures at which the solvent may be employed.

Thus, the reference discloses the decomposition of PET except for the specific use as dissolving "waste" PET which is often in the form of face fibers. Nevertheless, the stable characteristics of the solvent and its favorable interaction with PET would lead one skilled in the art to choose it as a solvent for the separation of the PET fibers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ as the separating solvent for the decomposition of polyethylene terephthalate from commingled waste would have been obvious since Clements discusses in detail the favorable interactions and stability of the EC as a solvent therewith. It is noted that the temperature range of about 215 would have been within the temperature stability for the solvent as noted in Table 1.

The further process step of removing impurities via sedimentation, flocculation, filtration, or centrifugation is exhaustively known in the art and of no patentable consequence.

Consequently, the claimed invention cannot be deemed as unobvious and accordingly

is unpatentable.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

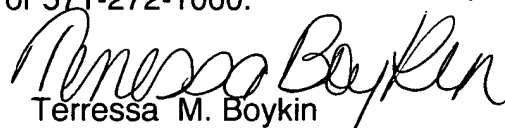
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terressa M. Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday-Thursday 10-5:30 Friday (work at home).

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Terressa M. Boykin  
Primary Examiner  
Art Unit 1711

\*\*\*